

LISTING OF THE CLAIMS

A complete listing of the currently pending claims is provided below. This listing supersedes and replaces any prior-submitted listings.

1-15. (Canceled).

16. (Previously Amended) An optical instrument lighting system for illuminating stained biological material fixed on a slide, comprising:

a light source comprising an LED microchip module, the module comprising a substrate and an array of closely spaced LEDs, including a first LED having a first narrow band wavelength and a second LED having a second narrow band wavelength different from the first narrow band wavelength, the first and second LEDs located side-by-side and being separately controllable; and

at least one lens disposed between the light source and the slide,

wherein the light source illuminates the slide using light emitted from one or both of the first and second LEDs, without dichroic mixing of the light, and without the light passing through a bandwidth filter,

the array of LEDs including one or more red LEDs and one or more green LEDs, the one or more red LEDs and the one or more green LEDs attached to the substrate, and a plurality of lenses, including a first lens positioned over at least one red LED, and a second lens positioned over at least one green LED

wherein the one or more red LEDs and the one or more green LEDs are embedded in a potting material, and wherein the first and second lenses are attached to the potting material.

17-18. (Canceled).

19. (Previously Presented) The system of claim 16, wherein the light source comprises an array of green LEDs.

20. (Previously Presented) The system of claim 16, wherein the light source comprises an array of red LEDs.

21. (Canceled).

22. (Previously Presented) The system of claim 16, further comprising a third LED having a third narrow band wavelength different from the first and second wavelengths.

23. (Previously Presented) The system of claim 16, wherein the first wavelength is between about 690 nm and about 750 nm.

24. (Previously Presented) The system of claim 16, wherein the second wavelength is between about 500 nm and about 600 nm.

25. (Previously Presented) The system of claim 16, wherein the light source comprises a first array of LEDs having the first narrow band wavelength, and a second array of LEDs having the second narrow band wavelength.

26. (Currently Amended) The system of claim 25, wherein the [a] first array of LEDs are formed on a first substrate, and the second array of LEDs are formed on a second substrate.

27. (Canceled).

28. (Previously Presented) The system of claim 25, wherein the first and second LED arrays are formed on a single substrate.

29-41. (Canceled).

42. (Currently Amended) [The] An optical instrument lighting system [of claim 29] for illuminating a biological sample, the system comprising an LED array, the LED array comprising:
a substrate;
a first narrow band wavelength LED consisting of a first die attached to the substrate;
a second narrow band wavelength LED consisting of a second die attached to the substrate,
the first narrowband wavelength different from the second narrowband wavelength, the first and
second dies attached side-by-side to the substrate such the first and second LEDs fall within a 4
mm diameter; and
a plurality of lenses, including a first lens positioned over the first die, and a second lens
positioned over the second die,
wherein the lighting system illuminates the sample using light emitted from one or both of
the first and second LEDs, without the light passing through a bandwidth filter,

wherein the first and second dies are embedded in a potting material, and wherein the first and second lenses are attached to the potting material.

43. (Canceled).